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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
09/808,317	03/14/2001	Naoyuki Ueda	09792909-4791	3727

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EXAMINER

CLOVE, THELMA S

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 01/15/2002

Please find below and or attached an Office communication concerning this application or proceeding.

Application No.

09/808.317

Applicant(s)

UEDA ET AL

Office Action Summary

Examiner

Thelma S Clove

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. 35 U.S.C. § 133.
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-12 is/are pending in the application
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

- 9) ☐ The specification is objected to by the Examiner
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f)
a) ☐ All b) ☐ Some * c) ☐ None of:
1 ☐ Certified copies of the priority documents have been received
2 ☐ Certified copies of the priority documents have been received in Application No. _____
3 ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
a) ☐ The translation of the foreign language provisional application has been received
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s): _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s): _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 1-3 and 5, 6, and 8-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Arai et al. (US 5952779).

3. Regarding claim 1, Arai teaches a light-emitting device comprising a layer including an emission region between an anode and a cathode, wherein the anode has a visible light transmittance of 30 to 70% (in column 2 lines 9-13).

4. Regarding claim 2, Arai teaches the device according to claim 1, wherein the visible light has a wavelength range of about 400 to 700 nm (in column 2 lines 61-66).

5. Regarding claims 3 and 5-6, Arai teaches the light emitting device according to claim 1, wherein the anode comprises indium tin oxide, wherein indium and tin are in groups IIIA and IVA of the periodic table (in column 2 lines 47-48).

6. Regarding claim 8, Arai teaches a light-emitting device according to claim 1, wherein the device comprises a transparent substrate, an anode, an organic layer including the emissive layer and a cathode (in column 2 lines 9-13 and 42-44).

7. Regarding claims 9-11, Arai teaches a light emitting device according to claim 8, wherein the organic layer includes a hole injection and a hole transport layer on the

anode side and an electron injection and an electron transport layer on the cathode side, wherein the emission layer is between the hole transport layer and the electron transport layer (in column 4 lines 35-44 and figure 1).

8. Regarding claim 12, Arai teaches the light-emitting device of claim 1 used in a display or the like (in column 1 lines 52-53).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura et al. (US 6074734) in view of Arai et al. (US 5952779).

11. Regarding claim 4, Kawamura teaches a light-emitting device with an emission region provided between an anode and a cathode, wherein the anode consists of a metal such as Au and has a transmittance higher than 10% (in column 5 lines 32-51).

12. Kawamura does not specify that the anode have a transmittance higher than 35%.

13. Arai teaches a light-emitting device with an emission region provided between an anode and a cathode, wherein the anode has a transmittance between 30 and 70%.

Arai teaches that an anode with a transmittance lower than 30% cannot provide a light-

emitting device with the required luminance and that an anode with transmittance over 70% is ineffective in preventing contrast reductions (in column 2 lines 56-61).

14. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the range of transmittance for the anode taught by Arai in the light emitting device of Kawamura since an anode with a transmittance between 30 and 70% balances the need for luminance and contrast as taught by Arai.

15. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai et al. (US 5952779) in view of Arai et al. (US 6303239).

16. Arai (US 5952779) teaches Arai teaches a light-emitting device comprising a layer including an emission region between an anode and a cathode, wherein the anode has a visible light transmittance of 30 to 70% (in column 2 lines 9-13).

17. Arai (US 5952779) teaches the anode comprising ITO doped with 1-15% iron oxide, wherein ITO has a work function of 4.6 eV. However, Arai does not teach the work function of the ITO doped with iron oxide.

18. Arai (US 6303239) teaches that an anode in a light emitting device with an emission region between an anode and a cathode should have a work function in the range of 4.5 eV to 5.5 eV in order to have a high hole injection efficiency (in column 5 lines 19-24).

19. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the anode of Arai (US 5952779) with a composition that gives a work function in the range taught by Arai (US 6303239) since anodes with a

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work function in the range of 4.5 eV to 5.5 eV have a high hole injection efficiency as taught by Arai (US 6303239).

Conclusion


20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Inoguchi et al. (US 5965981).

21.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thelma S Clove whose telephone number is (703) 308-6548. The examiner can normally be reached on Monday-Friday from 8 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D Patel can be reached on (703) 305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


TSC
January 11, 2002